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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,748	03/26/2004	Iu-Meng Tom Ho	2986P029C	9688

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EXAMINER	
TRAN, THIEN F	

ART UNIT	PAPER NUMBER
2811	

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/810,748	HO, IU-MENG TOM	
	Examiner	Art Unit	
	Thien F. Tran	2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 April 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *53-75* is/are pending in the application.

4a) Of the above claim(s) *56-59,64-71 and 75* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *53-55,60-63 and 72-74* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The declaration filed on 04/13/2006 under 37 CFR 1.131 has been considered but is ineffective to overcome the Davis et al. reference.

The evidence submitted is insufficient to establish a conception of the invention prior to the effective date of the Davis et al. reference. While conception is the mental part of the inventive act, it must be capable of proof, such as by demonstrative evidence or by a complete disclosure to another. Conception is more than a vague idea of how to solve a problem. The requisite means themselves and their interaction must also be comprehended. See *Mergenthaler v. Scudder*, 1897 C.D. 724, 81 O.G. 1417 (D.C. Cir. 1897). Documentary evidence (e.g. notebooks, photographs, drawings, disclosure document) has not been provided to prove conception.

The evidence submitted is insufficient to establish diligence from a date prior to the date of reduction to practice of the Davis et al. reference to either a constructive reduction to practice or an actual reduction to practice. Time period just prior to reference date until reduction to practice has to be shown, entire period for which diligence is required must be accounted for by either affirmative acts or acceptable excuses, and actual dates must be given.

The evidence submitted is insufficient to establish a reduction to practice of the invention in this country or a NAFTA or WTO member country prior to the effective date of the Davis et al. reference. Invention in a physical or tangible form has to be shown.

Election/Restrictions

Claims 70 and 71 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species of Fig. 9, there being no allowable generic or linking claim. Election was made **without** traverse of species 4 of Fig. 7 in the reply filed on 03/03/2005. The elected species 4 of Fig. 7 does not disclose or show the shielding mesh confined in at least one of the following regions in the at least one layer: (a) a block, (b) a channel, or (c) an area made by at least four power lines.

Claim 75 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species of Fig. 8, there being no allowable generic or linking claim. Election was made **without** traverse of species 4 of Fig. 7 in the reply filed on 03/03/2005. The elected species 4 of Fig. 7 does not disclose or show a power grid wherein a thickness of the first power line is substantially larger than a thickness of the first conductor.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 53-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crafts (US 5,288,949) in view of Davis et al. (US 2003/0155642).

Crafts discloses a method of designing an integrated circuit (IC), said method comprising: creating a representation of a shielding mesh in at least one layer (top layer

12) of said IC, said shielding mesh having a first plurality of lines (stippled shading in Fig. 5) which are designed to provide a first reference voltage Vdd and having a second plurality of lines (solid shading in Fig. 4) which are designed to provide a second reference voltage Vss; and creating a representation of a plurality of signal lines (unshaded 53, 56; Fig. 6) routed through said shielding mesh, wherein at least one of said signal lines is coupled to a signal line on another layer (bottom layer 9 of Fig. 4) through one via (see signal path 3 of Fig. 7). Crafts does not disclose the at least one signal line coupled to a signal line on another layer through at least two vias. Davis et al. as described above discloses mesh-like interconnection structure comprising conductive lines (wirings) at different levels connected to each other by a plurality of conductive vias 47. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the structure of Crafts to have the at least one signal line coupled to a signal line on another layer through at least two conductive vias as taught by Davis et al. to provide both vertical and horizontal reinforcement that inhibit delamination of the layers and cracking.

Regarding claim 60, Crafts discloses a method of designing an integrated circuit (IC), said method comprising: generating a representation of at least one signal line (unshaded signal trace; Fig. 4); generating a representation of a shielding mesh having a first layer (bottom layer 9 in Fig. 4) and a second layer (top layer 12 in Fig. 4), the first layer 9 including a first conductor (solid Vss trace), the second layer 12 including a second conductor (solid Vss trace), wherein the shielding mesh shields said at least one signal line (unshaded signal trace) which is routed through the shielding mesh; and

generating a representation of one via 18 connecting the first conductor to the second conductor. Crafts does not disclose two vias, each of the two vias connecting the first conductor to the second conductor. Davis et al. discloses mesh-like interconnection structure comprising conductive lines (wirings) at different levels connected to each other by a plurality of conductive vias 47. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the structure of Crafts to have the first conductor connected to the second conductor through at least two conductive vias as taught by Davis et al. to provide both vertical and horizontal reinforcement that inhibit delamination of the layers and cracking.

Regarding claim 61, the first conductor and the second conductor are not parallel.

Regarding claim 62, the first conductor and the second conductor are in close proximity.

Regarding claims 54, 55 and 63, Crafts in view of Davis et al. does not specifically disclose the method performed by an electronic design automation (EDA) tool that uses code written in an HDL. However, EDA tool that uses code written in an HDL is a well-known method in the art to design integrated circuits. Therefore, designing the integrated circuit of Crafts in view of Davis et al. using known EDA tool employing code written in an HDL would have been obvious modification.

Regarding claim 72, thickness of the first conductor is substantially the same as thickness of the at least one signal line. Also, it would have been obvious to form the

first conductor and the at least one signal line having the same thickness to simply the process step by forming both the signal line and the first conductor in one single step. Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the first conductor and the at least one signal line having the same thickness, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 73, an angle between a first direction (X direction) along the first conductor and a second direction (Y direction) along the second conductor is substantially close to 90 degrees.

Regarding claim 74, the first conductor (Vss trace) is substantially close to a signal line (unshaded trace) , the signal line being substantially parallel to the first conductor.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thien F. Tran whose telephone number is (571) 272-1665. The examiner can normally be reached on 8:30AM - 5:00PM Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

tt

June 16, 2006

Thien Tran
Primary Examiner